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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,903	12/29/2003	Ali S. Sadri	884.B53US1	1419

21186 7590 01/08/2009

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ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
01/08/2009	PAPER

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The time period for reply, if any, is set in the attached communication.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 5, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford (US 2002/0160737 A1) in view of Hilborn (7,065,171).

Regarding claim 1,

Crawford discloses a receiver comprising:

antenna selection circuitry (108-fig.1) to select more than one of a plurality of spatially diverse antennas (102-fig.2) to receive an orthogonal

frequency division multiplexed symbol over a wideband channel comprising a plurality of subchannels, see 0036-0037; and

combining circuitry (108-fig.1) to combine corresponding frequency domain symbol-modulated subcarriers from the selected antennas to generate combined symbol-modulated subcarriers for each subchannel of the wideband channel, wherein each subchannel of the wideband channel comprises a plurality of orthogonal frequency division multiplexed subcarriers, see 0036-0037.

Crawford does not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center frequency of each of other carriers in the system, see col.1, lines 37-52. Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford's system with the motivation being to prevent interference between closely spaced carriers.

Regarding claim 3, Crawford further discloses wherein the combining circuitry (108-fig.1) comprises maximum-ratio combining circuitry (MRC-0036) to combine the corresponding frequency domain symbol-modulated subcarriers of the subchannels, and wherein the combining circuitry comprises maximum-ratio combining circuitry to weight at least some of the frequency domain symbol-modulated subcarriers prior to combining the corresponding frequency domain symbol-modulated subcarriers substantially proportional to signal strength, see 0036.

Regarding claim 5, Crawford further discloses wherein the antenna selection circuitry (108-fig.1) is to select a first antenna (i.e. a5) of the plurality of antennas to receive the subchannels of the wideband channel, wherein the antenna selection circuitry is to select a second antenna (i.e., a6) of the plurality of antennas to further receive the subchannels of the wideband channel, and wherein the antenna selection circuitry (106-fig.1) is to select the

first and the second antennas from the plurality based on an average signal-to-noise (SNR, 0036) of signals in the subchannels, see also 0037-0038.

Regarding claim 22,

Crawford discloses a receiver comprising: radio-frequency circuitry (102-fig.1) to receive an orthogonal frequency division multiplexed symbol over a subchannel through a plurality of spatially diverse antennas; and maximum-ratio combining circuitry (MRC, 0036) to combine corresponding frequency domain symbol-modulated subcarriers from each of the antennas to generate combined symbol-modulated subcarriers for the subchannel.

Wherein the subchannel comprises a plurality of orthogonal frequency division multiplexed subcarriers (0036-0038),

Wherein the maximum-ratio combining circuitry is to weight the frequency domain symbol modulated subcarriers prior to combining the

corresponding frequency domain symbol modulated subcarriers substantially proportional to their signal strength (0036-0038).

Crawford does not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center frequency of each of other carriers in the system, see col.1, lines 37-52. Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford's system with the motivation being to prevent interference between closely spaced carriers.

Regarding claim 25,

Crawford discloses a system comprising:

a plurality of substantially omnidirectional spatially diverse antennas (102-fig.1);

antenna selection circuitry (selector 108-fig.1) to select more than one of the antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising a plurality of frequency-separated subchannels, wherein each subchannel of the wideband channel comprises a plurality of orthogonal frequency division multiplexed subcarriers, see 0036; and

maximum-ratio combining circuitry (combiner 108-fig.1) to combine corresponding frequency domain symbol-modulated subcarriers from the selected antennas to generate combined symbol-modulated subcarriers for each subchannel of the wideband channel, see 0036-0037, wherein the maximum-ratio combining circuitry is to weight the frequency domain symbol-modulated subcarriers prior to combining the corresponding frequency domain symbol- modulated subcarriers substantially proportional to the signal strength of an associated subcarrier, see 0036-0038.

Crawford does not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other

subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center frequency of each of other carriers in the system, see col.1, lines 37-52. Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford's system with the motivation being to prevent interference between closely spaced carriers.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Hilborn as applied to claim 22 above and further in view of Walton (US 2003/0043732 A1).

Regarding claim 24, The modified Crawford further discloses fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples to generate the frequency domain symbol-modulated subcarriers from signals received by each antenna (see Hilborn further discloses

a FFT 720 for converting the time domain digital signal to the frequency domain, see col.5, lines 41-45).

The modified Crawford does not explicitly disclose (1a) processing circuitry to generate parallel groups of time domain samples from signals received by each of the antennas, (1b) the processing circuitry to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the subchannel received by each antenna. However, in the same field of endeavor, Walton (US 2003/0043732 A1) discloses subcarrier demappers (Demode & De-Interleaver 730a-fig.7) to demap, after the channel equalization, the combined symbol-modulated subcarriers of each subchannel to generate parallel groups of bits from the subcarriers, corresponding to (1a); and the processing circuitry (Decoder 730a-fig.7) to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel (0200 & see also fig.6a), corresponding to (1b). Therefore, it would have been obvious to an artisan to apply Walton's

teaching to Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

4. Claims 6 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Hilborn as applied to claims 5 and 25 above, and further in view of Kuroda (6,603,961).

Regarding claim 6,

Crawford does not disclose (1) low-noise amplifiers (AGC 13-fig.1) to amplify radio-frequency signals of at least both subchannels; (2) downconversion circuitry to downconvert radio-frequency signals for each subchannel received through each antenna; and (3) analog-to-digital conversion circuitry to generate digital signals for each subchannel received through each antenna.

However, in the same field of endeavor, Kuroda (6,603,961) discloses the receiving portions 102-fig.3 for performing AGC, corresponding to (1);

converting the received signal into intermediate frequency signals, corresponding to (2); and ADC (not shown), however inherent therein the receiving portion, because without ADC, no digital signals input to FFT circuits 105-fig.3, corresponding (3); see also col.3, lines 19-46. Therefore, it would have been obvious to an artisan to apply Kuroda's teaching to Crawford's system, with the motivation being to receive and process OFDM signals received from antennas. This is a common practice in the art.

Regarding claim 27,

Crawford further discloses wherein parallel groups of time domain samples are to be generated from each of the subchannels received by each of the antennas, wherein the antenna selection circuitry is to select a first antenna of the plurality of antennas to receive the subchannels of the wideband channel, wherein the antenna selection circuitry is to select a second antenna of the plurality of antennas to further receive the subchannels comprising the wideband channel (0036-0038), and wherein the antenna selection circuitry is

to select the first and the second antennas from the plurality based on an average signal-to-noise ratio of signals in the individual subchannels (0036).

The modified Crawford further disclose fast Fourier transform circuitry to perform fast Fourier transform on the parallel groups of time domain samples (Hilborn, 720-fig.7).

The modified Crawford does not explicitly disclose (1) downconversion circuitry to individually downconvert radio-frequency signals for each subchannel and received through each antenna; and (2) analog-to-digital conversion circuitry to generate digital signals for each subchannel received through each antenna. However, in the same field of endeavor, Kuroda (6,603,961) discloses the receiving portions 102-fig.3 for performing AGC, corresponding to (1); converting the received signal into intermediate frequency signals, corresponding to (2); and ADC (not shown), however inherent therein the receiving portion, because without ADC, no digital signals input to FFT circuits 105-fig.3, corresponding (3); see also col.3, lines 19-46. Therefore, it would have been obvious to an artisan to apply Kuroda's teaching to Crawford's

system, with the motivation being to receive and process OFDM signals received from antennas. This is a common practice in the art.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Hilborn as applied to claim 1, and further in view of Polley (US 2005/0113041A1).

Regarding claim 4, Crawford-Hilborn do not disclose wherein parallel groups of time domain samples are to be generated from each of the subchannels received by each of the antennas, and wherein the receiver further comprises fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples.

However, in the same field of endeavor, Polley (US 2005/0113041A1) discloses wherein parallel groups of time domain samples (via TimeDomain 534, 536-fig.5) are to be generated from each of the subchannels received by each of the antennas (524, 526-fig.5), and wherein the receiver further comprises fast Fourier transform circuitry (508, 510-fig.5) to perform fast

Fourier transforms on the parallel groups of time domain samples. Therefore, it would have been obvious to an artisan to apply Polley's teaching to Crawford-Hilborn's system with the motivation being to transform time-domain signals into frequency domain signals to diversity receiver.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Hilborn as applied to claim 1 above, and further in view of Liang (US 2003/0165131A1).

Regarding claim 9, Crawford does not disclose (1) equalizer circuitry to perform separately for the more than one subchannel, a channel equalization on the combined symbol-modulated subcarriers of an associated subchannel provided by the combining circuitry).

However, in the same field of endeavor, Liang (US 2003/0165131A1) discloses equalizer (412-figs, 7-8), corresponding to (1). Therefore, it would have been obvious to an artisan to apply Liang's teaching to Crawford's system with the motivation being to improve channel capacity utilization under

multipath interference and frequency selective fading reception caused by multipath delay suppression.

7. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Hilborn and Liang as applied to claim 9 above, and further in view of Walton (US 2003/0043732 A1).

Regarding claim 10,

Crawford discloses all the claimed limitations, except (1) subcarrier demappers to demap, after the channel equalization, the combined symbol-modulated subcarriers of each subchannel to generate parallel groups of bits from the subcarriers; and (2) additional processing circuitry to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel. However, in the same field of endeavor, Walton (US 2003/0043732 A1) discloses subcarrier demappers (Demode & De-Interleaver 730a-fig.7) to demap, after the channel equalization, the combined symbol-modulated

subcarriers of each subchannel to generate parallel groups of bits from the subcarriers; and additional processing circuitry (Decoder 730a-fig.7) to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel (0200 & see also fig.6a), corresponding to (1-2). Therefore, it would have been obvious to an artisan to apply Walton's teaching to Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

Regarding claim 11,

Crawford discloses all the claimed limitation, except (1) wherein the subcarrier demappers are to demap the subcarriers of each subchannel in accordance with individual subcarrier modulation assignments particular to the subchannel to generate the parallel groups of bits. However, in the same field of endeavor, Walton discloses wherein the subcarrier demappers (Demod & De-

Interleaver 730a-fig.7) are to demap the subcarriers of each subchannel in accordance with individual subcarrier modulation assignments particular to the subchannel to generate the parallel groups of bits (0200), corresponding to (1). Therefore, it would have been obvious to an artisan to apply Walton's teaching to Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

8. Claims 12-14, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Walton and further in view of Hilborn.

Regarding claim 12, Crawford discloses a method comprising:

selecting (selector 108-fig.1) at least two antennas from a plurality of antennas to receive more than one subchannel of a wideband channel, the subchannels comprising a plurality of orthogonal frequency division multiplexed subcarriers, see 0036;

combining (combiner 108-fig.1) corresponding frequency domain symbol-modulated subcarriers of the subchannels to generate combined symbol-modulated subcarriers for each subchannel, see 0036-0037.

Crawford does not explicitly disclose (1) processing the combined symbol-modulated subcarriers to demodulate an orthogonal frequency division multiplexed symbol from the more than one subchannel. However, in the same field of endeavor, Walton discloses Demod 730a-fig.7 (0200 & see also fig.6a), corresponding to (1). Therefore, it would have been obvious to an artisan to apply Walton's teaching to Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

Crawford-Walton do not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center

frequency of each of other carriers in the system, see col.1, lines 37-52.

Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford-Walton's system with the motivation being to prevent interference between closely spaced carriers.

Regarding claim 13, Crawford further discloses performing fast Fourier transforms (FFT, fig.12A) on parallel groups of time domain samples for the subchannels received through each of the antennas, wherein the combining comprises maximum-ratio combining (MRC, 0036) comprising weighting at least some of the frequency domain symbol-modulated subcarriers and proportionally combining the weighted frequency domain symbol-modulated subcarriers of the more than one subchannel, and wherein the proportionally combining comprises combining the frequency domain symbol-modulated subcarriers substantially proportional to their signal strength (0036-0037).

Regarding claim 14, Crawford further discloses wherein selecting comprises: selecting (101-fig.1) a first pair of antennas of the plurality of antennas to receive one subchannel of the wideband channel (0036); selecting (101-fig.1) a second pair of antennas of the plurality of antennas to further receive the one subchannel of the wideband channel (0036-0038); and selecting (108-fig.1) the first and the second pairs of antennas from the plurality based on a signal-to-noise ratio of signals of the subchannel (0036-0038).

Regarding claim 19,

Crawford discloses a receiver comprising:

antenna selection circuitry (108-fig.1) to select one or more of a plurality of spatially diverse antennas to receive an orthogonal frequency division multiplexed symbol over a wideband channel comprising more than one of a plurality of subchannels and wherein each subcarrier of the wideband comprising a plurality of orthogonal frequency division multiplexed

subscarriers (0036-0037), wherein the antenna selection circuitry selects the one or more antennas from the plurality based on a signal to noise ratio of signals of the subchannels, see 0036-0038; and

Crawford does not explicitly disclose (1) subcarrier demodulators to demodulate frequency domain symbol-modulated subcarriers of the more than one subchannel to generate parallel groups of bits from the subcarriers; (2) wherein the processing circuitry is to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol from the parallel groups of bits of the more than one subchannel. However, in the same field of endeavor, Walton discloses Demod & Decoder 730a-fig.7 & fig.6a and see 0200, corresponding to (1-2). Therefore, it would have been obvious to an artisan to apply Walton's teaching to Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

Crawford-Walton do not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center frequency of each of other carriers in the system, see col.1, lines 37-52. Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford's system with the motivation being to prevent interference between closely spaced carriers.

9. Claims 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Walton and Hilborn as applied to claim 12 and 19 above, and further in view of Kuroda (6,603,961).

Regarding claim 15, the modified Crawford does not explicitly disclose: (1) amplifying, for each selected antenna, radio-frequency signals of the more than one subchannel; (2) individually downconverting the radio-frequency signals

separately for each subchannel and received through each antenna; and (3) generating digital signals for each subchannel received through each antenna.

However, in the same field of endeavor, Kuroda (6,603,961) discloses the receiving portions 102-fig.3 for performing AGC, corresponding to (1); converting the received signal into intermediate frequency signals, corresponding to (2); and ADC (not shown), however inherent therein the receiving portion, because without ADC, no digital signals input to FFT circuits 105-fig.3, corresponding (3); see also col.3, lines 19-46. Therefore, it would have been obvious to an artisan to apply Kuroda's teaching to the modified Crawford's system, with the motivation being to receive and process OFDM signals received from antennas. This is a common practice in the art.

Regarding claim 21,

The modified Crawford further discloses fast Fourier transform circuitry to perform fast Fourier transforms on the parallel groups of time domain samples to generate the frequency domain symbol-modulated subcarriers for

each of the subchannels for subcarrier demodulation (see Hilborn, FFT 720-fig.7 for converting the time domain digital signal to the frequency domain, see col.5, lines 41-45).

The modified Crawford does not explicitly disclose (1) downconversion circuitry to individually downconvert radio-frequency signals for each subchannel; (2) analog-to-digital conversion circuitry to generate digital signals for each of the subchannels; (3) processing circuitry to generate parallel groups of time domain samples from the digital signals of each of the subchannels.

However, in the same field of endeavor, Kuroda (6,603,961) discloses the receiving portions 102-fig.3 for performing AGC, corresponding to (1); converting the received signal into intermediate frequency signals, corresponding to (2); and ADC (not shown), however inherent therein the receiving portion, because without ADC, no digital signals input to FFT circuits 105-fig.3, corresponding (3); see also col.3, lines 19-46. Therefore, it would have been obvious to an artisan to apply Kuroda's teaching to Crawford's

system, with the motivation being to receive and process OFDM signals received from antennas. This is a common practice in the art.

10. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Walton and Hilborn as applied to claim 12 above, and further in view of Liang (US 2003/0165131A1).

Regarding claim 16, the modified Crawford does not disclose (1) performing a channel equalization separately for the more than one subchannel on the combined symbol-modulated subcarriers of an associated subchannel.

However, in the same field of endeavor, Liang (US 2003/0165131A1) discloses equalizer (412-figs, 7-8), corresponding to (1). Therefore, it would have been obvious to an artisan to apply Liang's teaching to the modified Crawford's system with the motivation being to improve channel capacity utilization under multipath interference and frequency selective fading reception caused by multipath delay suppression.

Regarding claim 17, the modified Crawford does not explicitly disclose (1) demapping, after performing the channel equalization, the combined symbol-modulated subcarriers of each subchannel to generate parallel groups of bits from the subcarriers; and (2) processing the parallel groups of bits of the more than one subchannel to generate a single decoded bit stream representing the orthogonal frequency division multiplexed symbol.

However, in the same field of endeavor, Walton further discloses Demod & De-Interleaver 730a-fig.7 and Decoder-730a-fig.7 & see also 0200 and fig.6a, corresponding (1-2). Therefore, it would have been obvious to an artisan to apply Walton's teaching to the modified Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

Regarding claim 18, the modified Crawford does not explicitly disclose wherein the demapping comprises demapping the subcarriers of each subchannel in accordance with individual subcarrier modulation assignments particular to the subchannel to generate the parallel groups of bits.

However, in the same field of endeavor, Walton further discloses Demod & De-Interleaver 730a-fig.7 and see 0200 & fig.6a, corresponding to (1). Therefore, it would have been obvious to an artisan to apply Walton's teaching to the modified Crawford's system with the motivation being to improve performance using only good channels in each group and matching the data processing for the selected channels to the capacity achievable by the channels.

11. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view Hilborn and further in view of Shao (US 2004/0258174 A1).

Regarding claim 31, Crawford discloses selecting (selector 108-fig.1; 656-fig.12a) at least two antennas from a plurality of antennas to receive more than

one subchannel of a wideband channel, the subchannels comprising a plurality of orthogonal frequency division multiplexed subcarriers, see 0036; combining (combiner 108-fig.1; 666-fig.12a) corresponding frequency domain symbol-modulated subcarriers of the subchannels to generate combined symbol-modulated subcarriers for each subchannel, see 0036-0037; and processing (demodulator 606-fig.12a) the combined symbol-modulated subcarriers to demodulate an orthogonal frequency division multiplexed symbol from the more than one subchannel.

Crawford does not explicitly disclose wherein each subcarrier of an associated subchannel has a null at substantially a center frequency of other subcarriers of the associated subchannel. However, in the same field of endeavor, Hilborn (7,065,171) discloses each carrier having a null at the center frequency of each of other carriers in the system, see col.1, lines 37-52. Therefore, it would have been obvious to an artisan to apply Hilborn's teaching to Crawford's system with the motivation being to prevent interference between closely spaced carriers.

The modified Crawford do not explicitly disclose (1) a computer-readable medium that provides instructions which, when executed by one or more processors, cause said processors to perform operations. However, in the same field, Shao (US 2004/0258174 A1) further discloses diversity system in multicarrier communication channel having machine readable (storage) medium 800 (0084), corresponding to (1). Therefore, it would have been obvious to an artisan to implement the modified Crawford's teaching into computer/machine processing product with the motivation being to ease the upgrade processing and cost saving.

Regarding claim 32, Crawford further discloses wherein the instructions, when further executed by one or more of said processors, cause said processors to perform operations further comprising: performing fast Fourier transforms (FFT 104-fig.12a) on parallel groups of time domain samples for the subchannels received through each of the antennas, wherein the combining (combiner 108-fig.1; 666-fig.12a); comprises maximum-ratio combining (MRC-0036)

comprising weighting at least some of the frequency domain symbol-modulated subcarriers and proportionally combining the weighted frequency domain symbol-modulated subcarriers of the more than one subchannel, see 0036-0037, and wherein the proportionally combining comprises combining the frequency domain symbol-modulated subcarriers substantially proportional to their signal strength, see 0036-0037.

Regarding claim 33, Crawford further discloses wherein the instructions, when further executed by one or more of said processors, cause said processors to perform operations further comprising: selecting (selector 101, 108-fig.1) a first pair of antennas of the plurality of antennas to receive the more than one subchannel of the wideband channel; selecting (selector 101, 108-fig.1) a second pair of antennas of the plurality of antennas to further receive the more than one subchannel of the wideband channel; and selecting (108-fig.1) the first and the second pairs of antennas from the plurality based on a signal-to-noise ratio of signals in the subchannels (0036-0037).

Allowable Subject Matter

12. Claims 7-8, 28, 30 are allowable over the prior art.

Response to Arguments

13. The indicated allowability of claims 2, 20, 23, 26 is withdrawn in view of the newly discovered reference(s) to Hilborn (7,065,171). Rejections based on the newly cited reference(s) follow.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONGCHAU BA NGUYEN whose telephone number is (571)272-3148. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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